

## PATENT ABSTRACTS OF JAPAN

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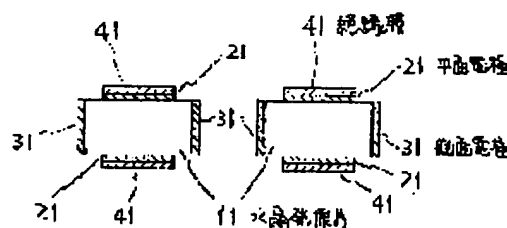
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## (54) CRYSTAL OSCILLATOR CHIP

## (57)Abstract:

PURPOSE: To improve the accuracy and the reliability by providing an insulation film at least onto a plane electrode among the plane electrode and side face electrodes being electrodes of the chip so as to prevent an external gas or dust from being adsorbed by the plane electrode of the crystal oscillation chip.

CONSTITUTION: An electrode of a crystal oscillation chip 11 consists of a plane electrode 21 made of a metallic film provided onto a crystal plane and of a side face electrode 31 made of a metallic film provided onto the crystal plane. Moreover, an insulation film 41 is deposited on the plane electrode 21 to prevent adsorption of an external gas or dust. Thus, the adsorption of a gas released from a plug, a case and an adhesives being components of the crystal vibrator onto the plane electrode 21 of the crystal oscillation chip 11 is prevented, resulting that the crystal vibrator with high accuracy is obtained without a characteristic deterioration in the change in the oscillation frequency and an increase in the CI or the like.



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